R E P O R T R E S U M E S

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HOW TO PROVIDE AUTOMATIC FIRE PROTECTION FOR YOUR BUILDING.
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THE ADVANTAGES OF PROMPT FIRE DETECTION IS DISCUSSED WITH RESPECT TO THE NATURE AND COST OF FIRES. EQUIPMENT IS DESCRIBED, AND DIAGRAMS OF INSTALLATIONS OF DETECTION AND ALARM SYSTEMS ARE GIVEN FOR SCHOOLS, HOSPITALS, COMMERICAL BUILDINGS, INDUSTRIAL PLANTS, AND CAMPUSES. (JT)

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HONEYWELL PLANNING GUIDE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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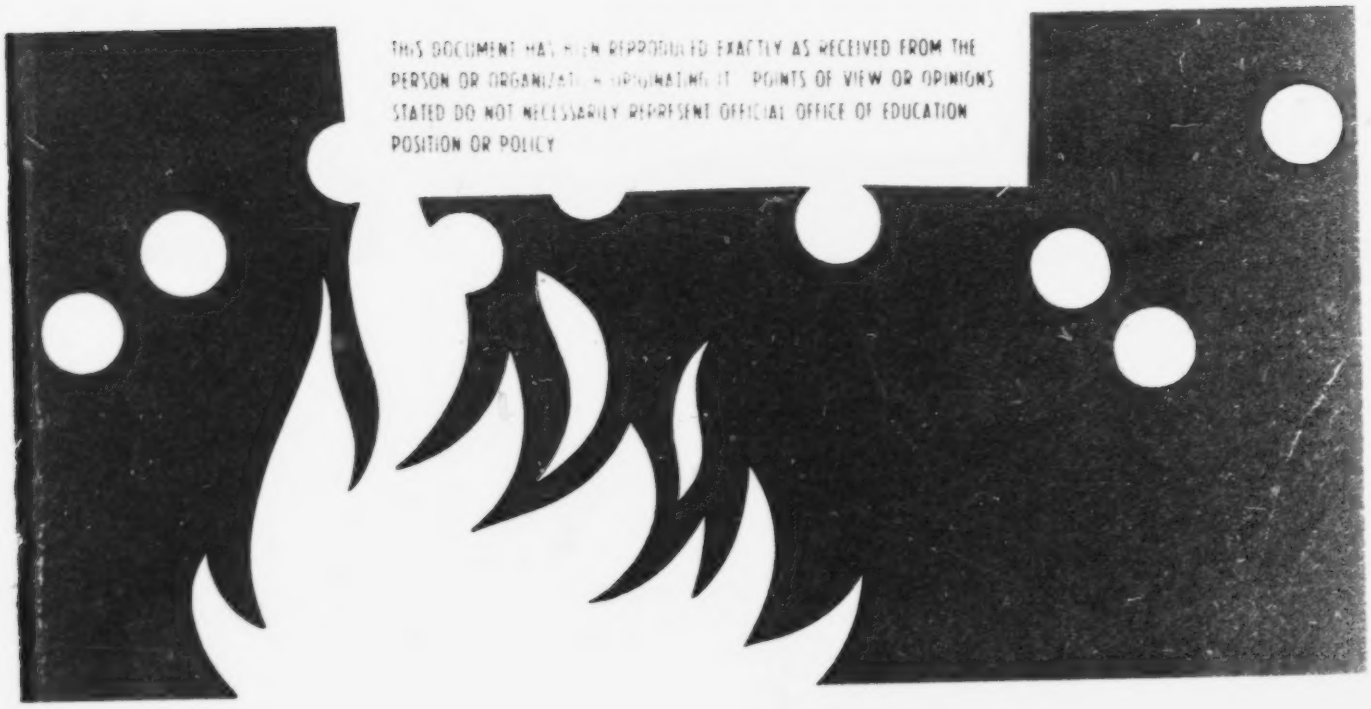

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HOW TO PROVIDE

AUTOMATIC FIRE PROTECTION

FOR YOUR BUILDING

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Photo Courtesy of St. Paul, Minnesota, Fire Department

THE PROBLEM OF FIRE IN YOUR BUILDING

Take a practical look at the chances of fire, the damage it does and how to be protected from it

In planning fire protection for your building, you should heed the "ounce of prevention" theory. But if a fire starts even after the most elaborate prevention methods, you will also need the "pound of cure" provided by firemen, sprinklers and evacuation. And between the prevention and the cure, there lies a wide area of protection. This area includes such vital things as discovering that a fire has started, knowing where it is, notifying firefighters, sounding alarms that will start the evacuation of people.

What are the chances of fire in your building? A lot depends on the way your building is built, what kind of wiring it has, how good your housekeeping procedures are, how careful or careless your employes are, and how lucky you are. Occasionally, luck plays an *important* part. Sometimes a fire will go out by itself. Sometimes someone will notice it right away and put it out. But figures unfortunately show that Lady Luck has been absent in a great number of fires. In 1960, fires caused $1,047,073,000 damage. Fires cost 11,353 lives that same year, including some 3,000 children. Every 45 minutes, fire takes a life. There were 17,409 fires in non-residential structures such as office buildings, schools and hospitals. There were 46,651 fires in mercantile buildings such as stores. Manufacturing plants had 21,760 fires in 1960. Storage buildings had 6,898.

What will a fire cost you?

These casualty and damage figures of the National Fire Protection Association tell only part of the story. No elaboration is needed upon the tragedy of death and injury caused by fire. And structure, machinery, merchandise and fixtures can be estimated to the dollar in most buildings. Insurance often covers most or all of this loss. But often a business is worth much more than its building and equipment. Closing down a store because of fire not only stops all sales, but often will drive regular customers away for good. Finding or building new quarters is costly for institutions such as schools, hospitals, nursing homes and office buildings. Often, the time consumed in finding and constructing a new building is more valuable to a business than the loss incurred by the fire itself. Smoke and water damaged merchandise also must be liquidated at a price that represents less-than normal profit.

Fire protection and fire insurance

The insurance you buy to protect your building from fire loss is written strictly according to the risk involved. Insurance rates are established by area rating bureaus. These rates are then discounted by means of insurance credits. Insurance rates for a building within any city depend upon dollar valuation, the quality of the municipal fire fighting facility, type of construction, type of industrial process, whether watchmen are required and if automatic protection exists.

Fire insurance generally insures a building and its contents only against property damage. Workmen's compensation and public liability insurance are not similarly discounted. Therefore, measures taken to protect a building from fire affect only property insurance.

The nature of fire

Fire is nearly 100 per cent unpredictable. You never know where it might start. You're never sure in which direction or how fast it will travel. Fire that starts in the basement of a building might suddenly block all exits from the eighth floor because flames, smoke or fumes shoot up a shaft or between the walls. Sometimes fire will be stalled by a wooden door, but at the same time demolish a brick wall. Certain materials will burn slowly, but when a critical temperature is reached the material suddenly flashes and turns a room into a holocaust.

Some fires begin slowly. They sometimes smoulder for hours before bursting into flame. Other fires begin explosively.

Smoke—the greatest danger

While fire may spread rapidly and build up tremendous heat, the greatest danger is smoke. Even a small fire may produce heavy smoke quickly. In recent tests conducted by the Los Angeles Fire Department, escape routes were blocked by smoke BEFORE heat in every case.

Visibility is reduced quickly by smoke and occupants of a building become bewildered to the extent they cannot find their way out. A very high percentage of fire deaths are caused by asphyxiation rather than by the fire itself. Also, smoke obscures the fire and firemen have difficulty locating the blaze in time to put it out.

FAST DETECTION IS VITAL

Speed is essential to permit safe evacuation and reduce property losses

The theory of automatic fire detection and alarm is based on the element of time. Time is the most important single factor in saving lives and preventing heavy property loss. While some fires, such as those started by a major explosion, are out of control the moment they start, most fires begin slowly in an isolated place. If they are detected before they have a chance to spread, they can be extinguished before they constitute a hazard or cause major damage.

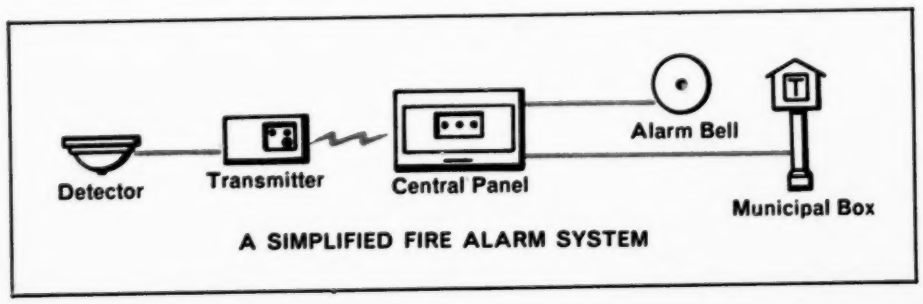
Automatic fire protection goes further than detection. After a fire is detected, a distinct, understandable alarm must be sounded to evacuate occupants of a building, alert a responsible person, notify the fire department and pinpoint the location of the fire. In addition, all fire detection and alarm equipment must be electrically **supervised,** that is, designed to signal a warning should any trouble develop in the system itself.

The system approach

To provide reliable protection, fire detection and alarm equipment must be tied together into a system. All components of a system operate in conjunction with each other and with a central control panel. While the system operates automatically and without human help, except where fire is signalled by a pull-box, people become involved as soon as a fire is detected and an alarm is sounded. For this reason, centralized location of panels, recording devices, monitoring signals and other equipment offers many advantages. A responsible person such as a school principal, building engineer or plant guard is constantly in touch with the entire system. He is immediately notified of any system breakdown by audible and visual signal.

In buildings such as hospitals and nursing homes where a central panel includes pre-signal system, the administrator or other assigned person receives the alarm signal so the location and seriousness of the fire is confirmed before patients are evacuated. In event of fire, centralized location of equipment permits the responsible person to take whatever action is deemed necessary. This action includes not only calling firefighters, but such things as shutting down mechanical equipment and fans, closing fire doors and other action related to the particular building. He is in full control of the situation at the central

panel and does not have to leave his post. Fire detection and alarm systems may be wired directly into control consoles for air conditioning, security and other automated building functions.



A SIMPLIFIED FIRE ALARM SYSTEM

How alarm systems pinpoint the fire

Pinpointing the location of the fire is extremely important for two reasons. First, safe evacuation is dependent in great part upon the occupants of the building knowing the location of the fire so they can use safe exits. Second, firefighters can reach the fire more quickly if the alarm system automatically points the way.

There are basically two ways by which fire alarm systems can announce the location of fire or system trouble within the building. One is by *annunciation*, the other by *coded signals*.

Annunciator panels contain number lights for each zone of the building being protected. Each light is wired directly to the zone, so that any detection device in that zone will turn on its respective light on the panel.

A coded system includes a transmitting device in each zone. When any detector is activated, the signal from the detector goes first to the transmitting device. Then the transmitter sends a signal in code back to the central panel. This coded signal then is relayed to bells, to readout lights or onto an automatic register. When relayed to general alarm bells, the location of the fire is immediately made known to everyone in the building by the coded signal sounded by the bell. For example, if a six-story building is divided into 30 zones, or five per floor, a coded signal of three strokes of the bell, then a pause, and four additional strokes, it would indicate fire on the third floor, in the fourth zone of that floor.

Annunciator panels are sometimes used with a coded system to give indication of the fire's location after the coded bell signal has stopped. Another way to provide continuous indication is to have a continuously ringing coded bell signal. An automatic register, in addition to providing a written record, also indicates to firefighters the location of the fire. Many variations can be engineered to suit the specific application.

Systems and economics

A complete fire protection system often will pay for itself in the first year or two of operation, then will go on saving money in future years. One of these savings is in labor costs. Large buildings or groups of buildings such as industrial complexes, college campuses and shopping centers normally require a guard force for fire protection and security. When a centralized fire and/or security system is installed, the number of guard posts can usually be reduced substantially. The savings in this area alone can be realized when you consider that it costs about $25,000 a year to man each guard post.

More savings can be realized when the installation of a fire detection and alarm system results in lowered insurance rates. Both the reduction in guard posts and the lower insurance rates should be considered when planning a fire protection system for your building.

Honeywell's place in the fire protection industry

Honeywell manufactures and sells a full line of detection and alarm equipment for specific types of applications. One is *local system* equipment. This equipment protects buildings occupied by people, such as schools, hospitals, nursing homes, office buildings, stores, restaurants, apartment buildings, hotels and motels, churches, libraries and college buildings. The other major category of Honeywell equipment protects such complexes as industrial plants, military establishments and college campuses. This is known as a *proprietary system*. Honeywell equipment is used also in *remote station* applications, where several buildings such as a suburban school system, are tied together in an alarm system that is monitored by the local fire or police department. All Honeywell local systems can be tied into *municipal systems*.

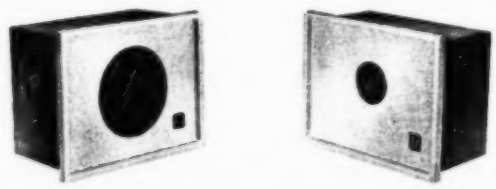
HONEYWELL OFFERS ALL REQUIRED DEVICES

A complete line of fire detection and alarm devices, panels and related equipment

Honeywell's general control policy is to assume complete responsibility for all devices within a system. This single source responsibility provides fully matched components, designed and engineered to work together at top efficiency in a system. Instead of manufacturing a detector to work with another company's control panel, or making a pull box to tie in with someone else's alarm system, Honeywell provides the complete system. The products shown on these pages are only representative of the types of devices. How they work in the various types of custom systems will be shown on subsequent pages.

Thermal Detector

There are three basic types of thermal detectors, the *fixed-temperature type, the rate-of-rise type* and the *combination type*. The fixed-temperature detector transmits an electrical signal when temperature reaches a pre-set level. The rate-of-rise detector responds when the temperature climbs a pre-determined number of degrees in a pre-set time. The combination detector is both a fixed-temperature and rate-of-rise device. The fixed-temperature detector is used in areas with constantly fluctuating temperatures such as in boiler rooms. The rate-of-rise detector is used where temperatures are fairly constant, and any sudden change would be abnormal. The combination detector guards critical areas such as those occupied by many people because it responds both to abnormally high temperatures and sudden rises in temperature.



Smoke Sentry

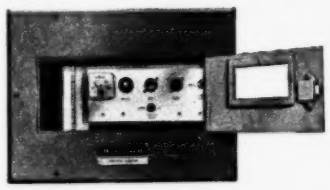
The Smoke Sentry is a "beam-of-light" smoke detector which was proved fastest of all fire or smoke detectors tested in Operation School Burning

II recently conducted in Los Angeles. Because it detects smoke, which is nearly always the first sign of fire, the Smoke Sentry does not need to wait for heat to build up from a fire. Even smouldering fires are detected because smoke travels quickly. The Smoke Sentry is composed of two units, a light projector and a sensor. The projector casts a beam of light to a photo-cell in the sensor. Whenever smoke or heavy dust concentrations interrupt the beam, an electrical relay in the sensor is tripped and the alarm is sounded.

A one-second time delay is built into the device to avoid false alarms caused by children throwing books through the beam of light or a custodian carrying a ladder through it. The Smoke Sentry covers a 4,500 square feet, or 30 by 150 feet, an area larger than any other detector can cover. This device is used in corridors, auditoriums, meeting rooms, stairways, storage areas and other open areas where fire spreads rapidly and where people may not be present to notice the fire in time. Areas in which electronic equipment such as computers is located can be protected effectively because the Smoke Sentry detects smoke – the first sign of fire. If smoke is detected quickly, damage to expensive equipment is minimized. In buildings with sprinklers, the Smoke Sentry is valuable in detecting smoke before heat builds up high enough to release water from the sprinklers, especially in areas where water would cause extensive damage to merchandise and equipment.

Manual pull station

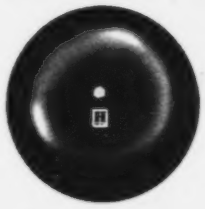
This unit is the familiar "pull-box" station, which is operated manually by a person who notices a fire. They also are used in equipment tests and fire drills. Every fire alarm system should have at least one manual station on each floor of the building.



Control panels

All fire detection and alarm systems have a control panel, such as the one shown above. The function of the control panel is to provide a

central junction for circuits which connect detectors to alarm devices. Also the panel translates system trouble signals into audible and visible warnings. There are two basic types of panels, those operated by line voltage or 120 volt AC current, and those operated by low voltage DC current. Various regulations and codes require that power for a fire alarm system be provided through two circuits, one for main operating power, the other for trouble signals. Some codes permit use of batteries as standby, emergency power. The entire detector and alarm system is electrically supervised by the control panel, so that if any shorts, grounds or wire breaks occur, a trouble signal will be actuated. All panels are equipped with test switches to test the system and to permit fire drills. In a fire, the signal from the detector or manual pull station is transmitted to the panel, then relayed to the alarm device.



Alarm signal devices

The most common alarm device is the bell, or gong, six or ten inches in diameter. It is important that the alarm device have a distinct signal to differentiate it from other signals used in the building, such as clock signals. In some buildings, the use of horns or sirens may be desired.

Coded transmitters

Placed on the circuit between the detector and the control panel in many installations is the coded transmitter. This device sorts out signals from all fire and smoke detectors, sprinkler supervisory switches and manual stations in a certain area. It then transmits a coded signal to the control panel, which relays the signal to alarms in the form of coded bell signals. Auxiliary contacts are provided so that the operator can tell whether the signal is coming from a detector, sprinkler switch or manual station. Circuits used with coded transmitters are designed to prevent jumbled alarm signals when two transmitters are actuated simultaneously.

Annunciator panels

To provide instantaneous notification of a fire's location in non-coded system, the various fire zones are tied into an annunciator panel. As many as 48 zones can be included in a single panel. The panel is composed of one or more modules of four to eight zone lights. The lights are mounted behind plastic panels which hold indicating numbers. Fire in a particular zone is thereby indicated by lighted number. In a system employing a coded transmitter, the annunciator panel is sometimes used to indicate sprinkler flow while the coded bell system indicates that a detector is responding to smoke or fire. In systems where no coding is used, the annunciator indicates the location of the fire while the alarm is being sounded.

Sprinkler supervisory devices

Several devices are used in a fire alarm system in which a sprinkler system is included. Switches to indicate water flow and devices to indicate water storage levels, water pressure and water temperature are used to supervise the entire sprinkler system and insure against failures. Signals from these devices are transmitted to the central fire panel.

Combination watchman stations

Available for buildings in which watchmen make regular rounds are coded watchman-pull station devices. These stations include manual pull stations for reporting fires and a device by which the watchman records his regular stops. Both devices send separate coded signals back to the central panel to indicate their operation. Signals both from the watchman's station and the pull-box can be relayed onto readout lights, print-registers or audible signals at the central panel.

HONEYWELL FIRE DETECTION AND ALARM SYSTEMS

Practical engineering governs the choice of system for each particular application

It can safely be said that no two fire detection and alarm systems are the same. Nor should they be. The type of building or group of buildings, along with many other factors, must be considered. Obviously, a fire alarm system designed for a school would not adequately protect an industrial complex. Nor should the type of system ordinarily used in an office building be used in a hospital.

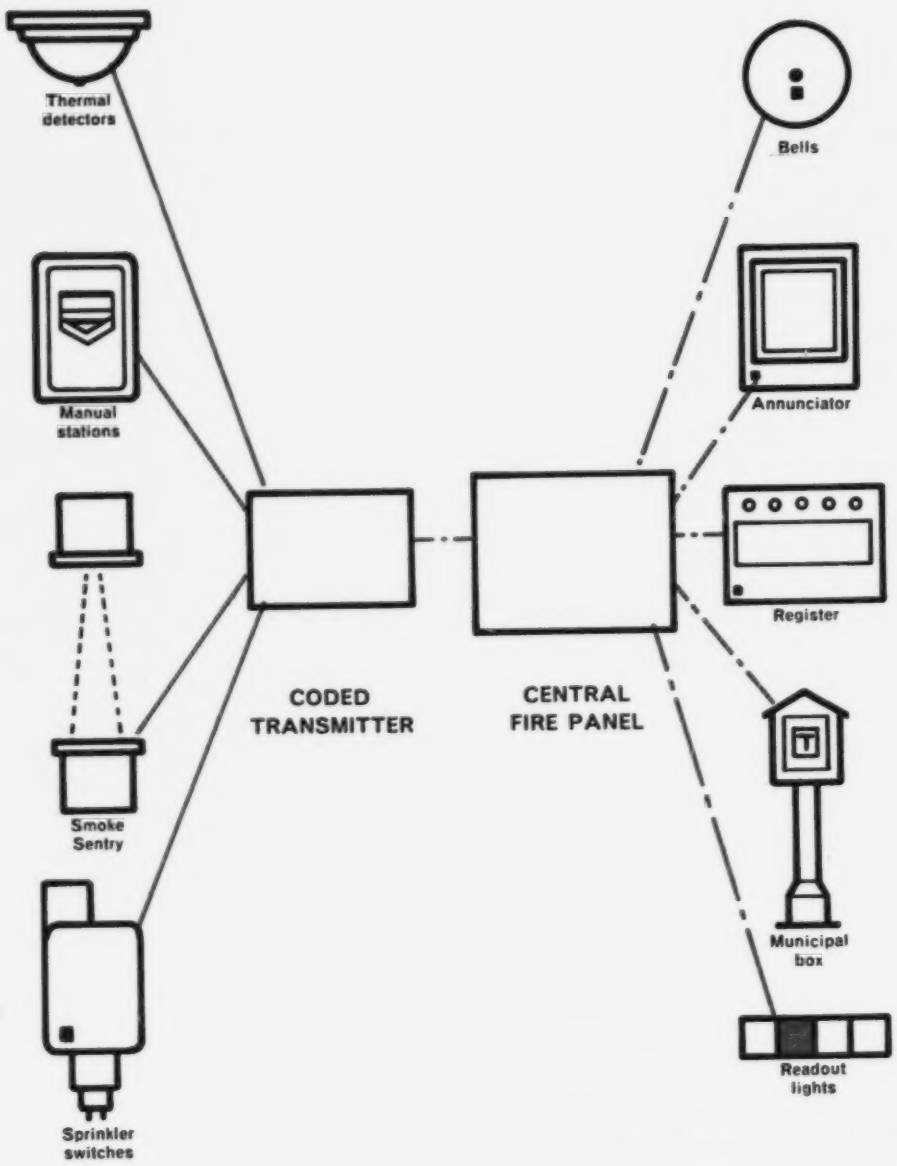
Your architect, electrical engineer or electrical contractor should be consulted before any fire alarm system is decided upon. Your insurance representative also can be of help when planning automatic fire protection. Honeywell sales engineers, specially trained in the problems of fire protection, can assist you, your architect, engineer and contractor in choosing the right equipment.

Typical systems

The five typical fire detection and alarm systems shown on subsequent pages are only representative of some of the types of systems and equipment which Honeywell can provide. The systems as shown offer the maximum in safety for life and property at the lowest cost. Honeywell does not manufacture or sell sprinkler systems. But supervision of sprinkler systems where they exist, is a vital part of an automatic fire detection and alarm system. For this reason, sprinkler supervision is shown as a part of the various systems.

When planning a fire protection system, it is important to consider the value of tying other building automation systems into the fire system. By utilizing common conduit, panels and other equipment, several systems, including security, clock, fire and some temperature control equipment, can be tied together at a cost substantially less than if each system were installed separately. Honeywell engineers can recommend the best and most economical way to provide a completely integrated system of controls for your building.

They can assist you in performing a building-need analysis in your present or proposed building to determine which equipment and what kind of system is best suited to the particular needs. This kind of planning will result in a better system at lower cost. Honeywell sales engineers are located in 112 offices across the nation to provide service on a local basis.



The typical fire detection and alarm system is composed of four basic units, the sensors, the transmitter, the central panel and the signal indicating devices. When fire activates a sensor, a signal is sent to the transmitter. The transmitter sends a coded signal to the central panel, which in turn relays the coded signal to signal indicating devices. This sketch shows equipment used in a typical system. Each system varies, however, as to which devices are called for.

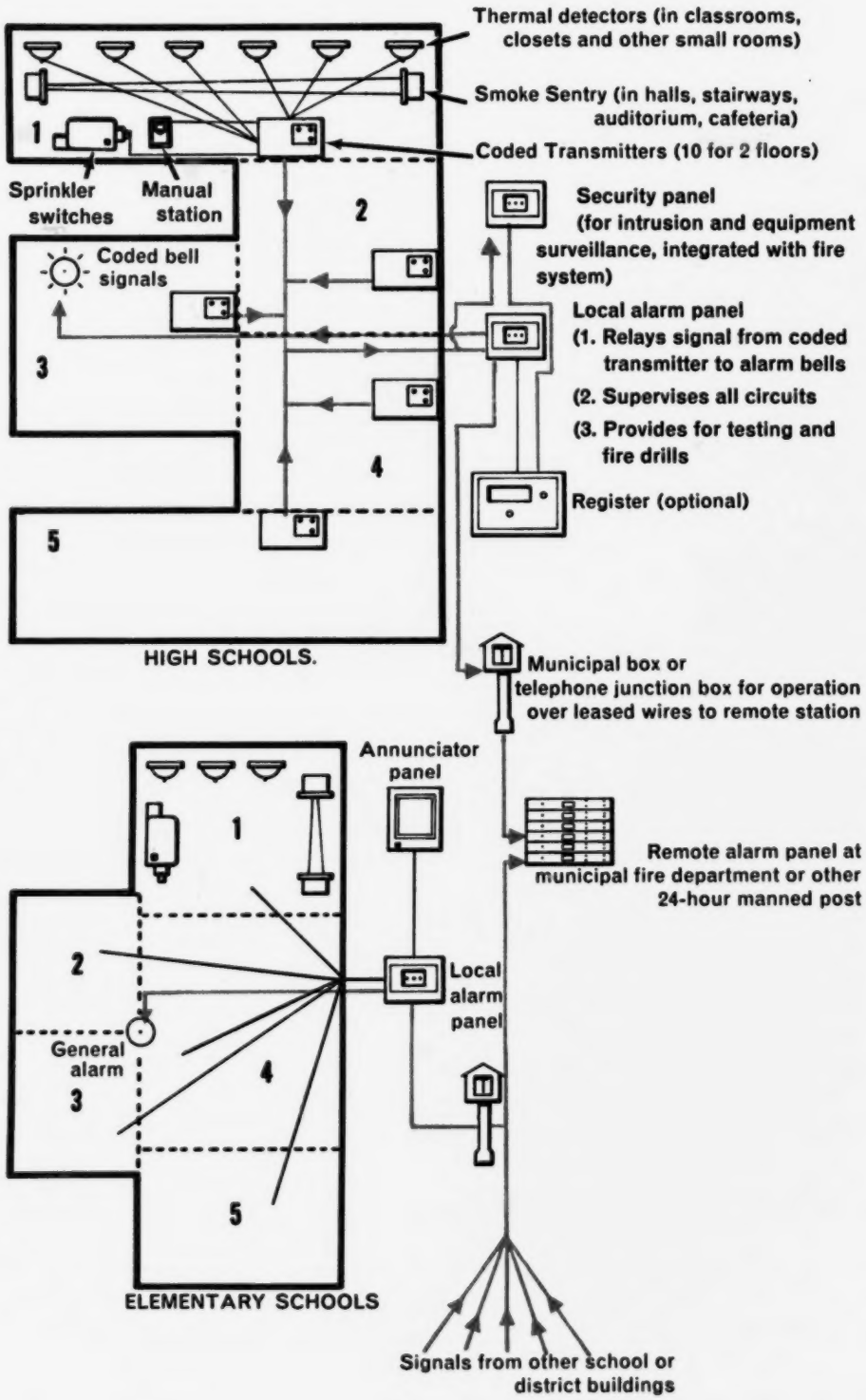
TYPICAL SYSTEM FOR SCHOOLS

Two basic types of fire detection and alarm systems are recommended for use in schools, depending much upon the size of the building. High schools, which are usually larger than elementary schools, use a coded alarm system. As the sketch shows, the school is divided into ten zones, five to each floor. All thermal detectors, Smoke Sentry detectors, manual stations and sprinkler switches in a zone are tied into a coded transmitter. The transmitter, in event of fire, receives a signal from the detection device and relays a coded signal to the local alarm panel, usually located in the administrative offices.

The panel relays a coded bell signal to the alarm bells, sirens or horns. The coded alarm signal informs everyone in the building of the location of the fire. Simultaneously, the signal is transmitted to a municipal alarm box or telephone junction box so that the fire department or other remote station is informed of the fire. Security and surveillance equipment may be tied into the same system, although no general alarm is sounded in case of intrusion or heating equipment failure. In the smaller elementary school, each zone of the building is wired directly back to the panel, where detector signals are relayed to a general alarm. Instead of a coded system, the location of the fire is shown on an annunciator panel. The signal is also relayed to the municipal box.

In large schools, a register is tied into the alarm panel to record on paper the location of the fire for the information of firemen and others. Another method is to provide indication of the fire's location after the original alarm is sounded is to have continuous ringing of the coded alarm signal.

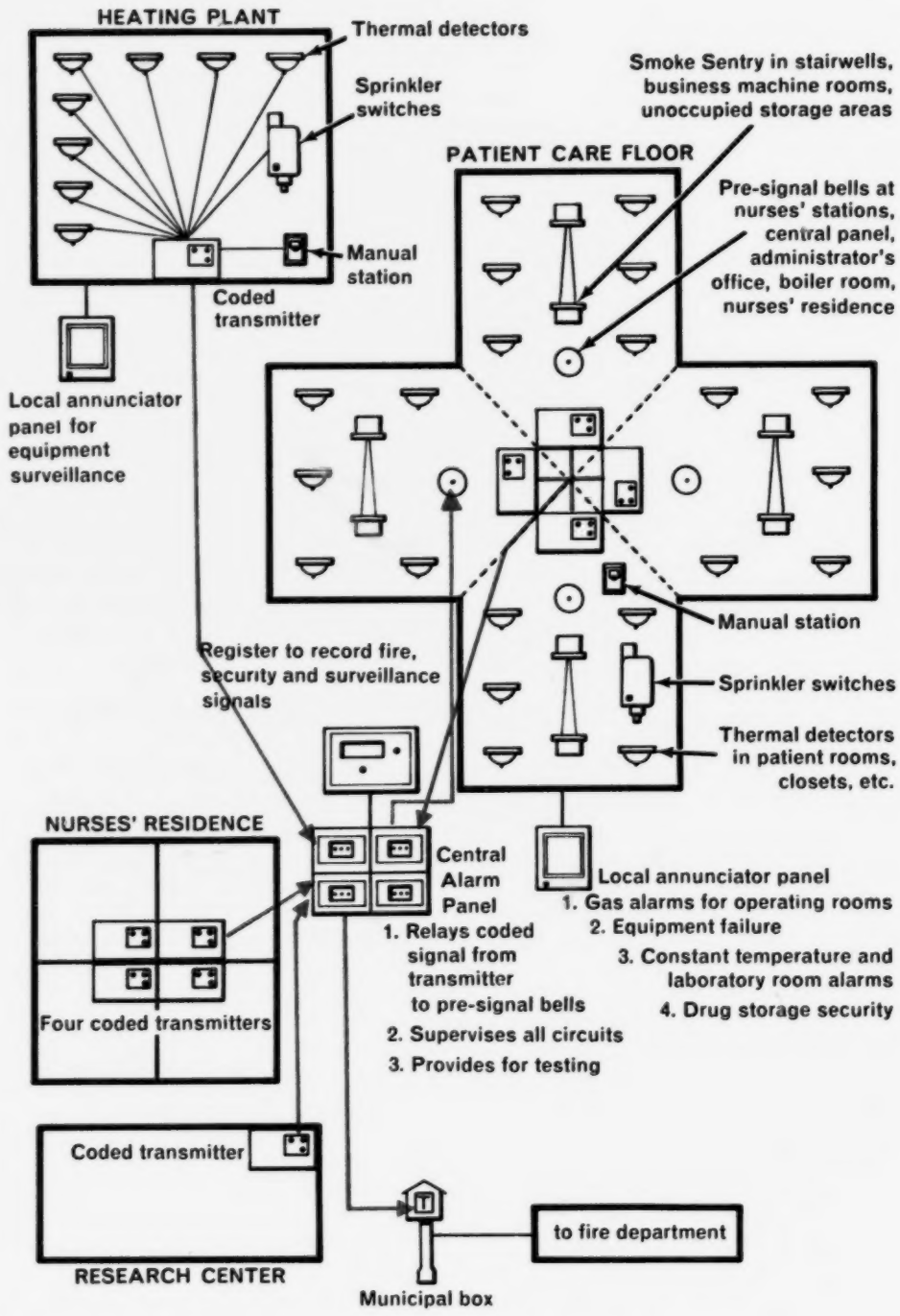
In communities without a municipal fire alarm system, all the schools and other buildings may be tied into a leased telephone line with a panel at a remote, central location, such as an answering service, the superintendent's home or fire and/or police headquarters.


Thermal detectors (in classrooms, closets and other small rooms)
Smoke Sentry (in halls, stairways, auditorium, cafeteria)
Coded Transmitters (10 for 2 floors)
Sprinkler switches
Manual station
Coded bell signals
Security panel (for intrusion and equipment surveillance, integrated with fire system)
Local alarm panel
(1. Relays signal from coded transmitter to alarm bells
(2. Supervises all circuits
(3. Provides for testing and fire drills
Register (optional)
1
2
3
4
5
HIGH SCHOOLS.
Municipal box or telephone junction box for operation over leased wires to remote station
Annunciator panel
Remote alarm panel at municipal fire department or other 24-hour manned post
Local alarm panel
General alarm
1
2
3
4
5
ELEMENTARY SCHOOLS
Signals from other school or district buildings

TYPICAL SYSTEM FOR HOSPITALS

Hospitals have special fire detection and alarm requirements. Because of critical evacuation problems, a pre-signal alarm system gives key personnel such as nurses, the administrator and the hospital engineer the first warning of trouble. To give these key people instantaneous warning of a fire, a coded alarm system is needed. All thermal and smoke detectors, sprinkler switches and manual pull stations are tied into coded transmitters — four to a floor in a typical installation as shown here. The heating plant, the nurses' residence and the research center, all usually separated from the main hospital building, also have coded transmitters. All the transmitters send coded alarm signals back to the central panel. Coded bell signals then are relayed automatically to pre-signal bells at nurses' stations, the administrator's office, the boiler room, the nurses' residence office and other key locations.

By using this pre-signal system, patients do not hear alarm bells and orderly evacuation can be carried out by hospital personnel. Located near the central panel is a register which records all fire and trouble signals on paper for a permanent record. Also, an annunciator panel for gas alarms in operating rooms, equipment failure, variations in constant temperature rooms, and drug storage security is located at the central panel. The alarm panel is tied into the municipal box outside the hospital so that the fire department is notified automatically. A local annunciator panel also is located in the heating plant to give the engineer immediate notification of equipment failure both in the heating plant and at remote equipment rooms.

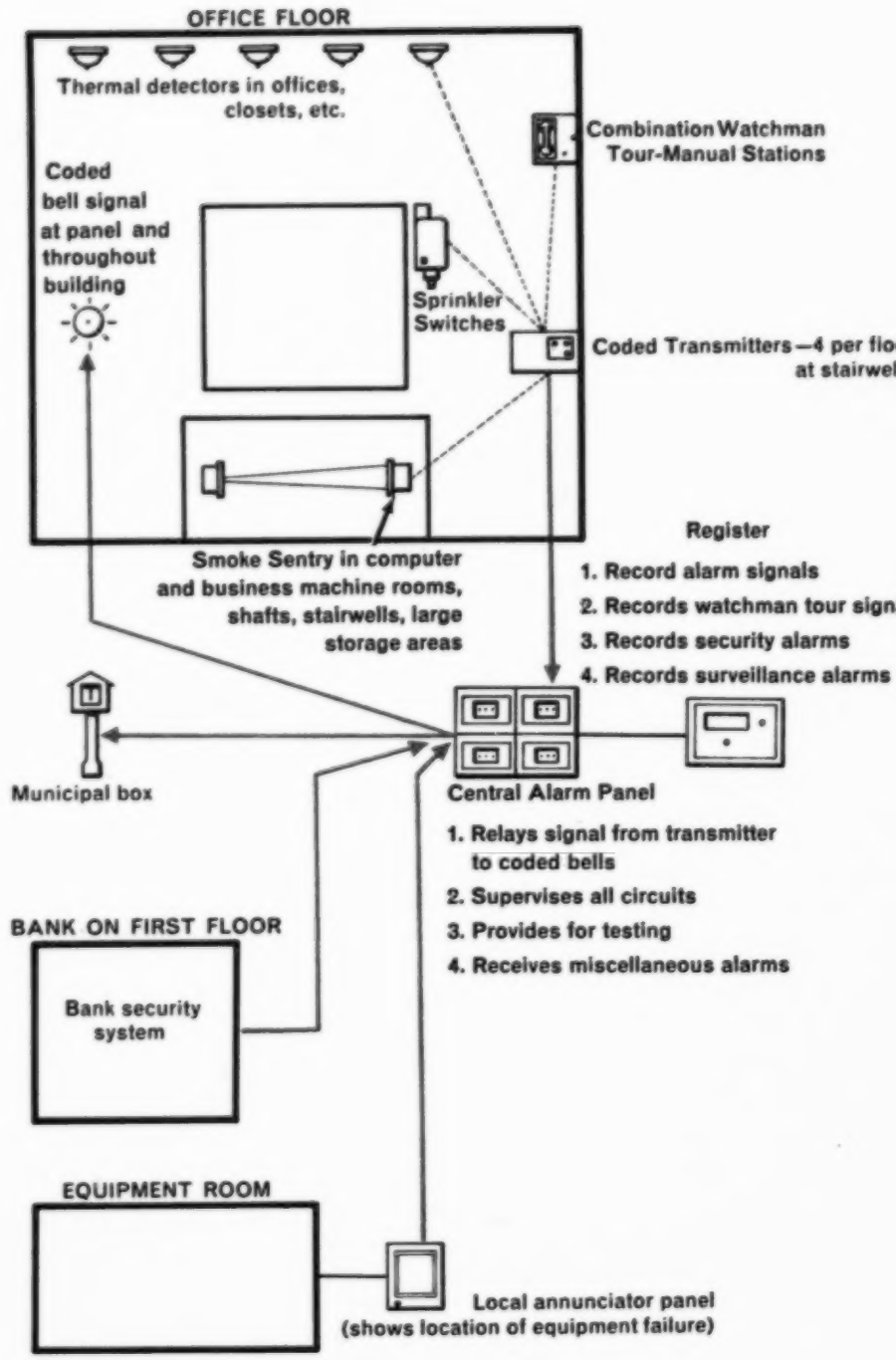

HEATING PLANT
Thermal detectors
Sprinkler switches
Manual station
Coded transmitter
Local annunciator panel for equipment surveillance
Smoke Sentry in stairwells, business machine rooms, unoccupied storage areas
PATIENT CARE FLOOR
Pre-signal bells at nurses' stations, central panel, administrator's office, boiler room, nurses' residence
Manual station
Sprinkler switches
Thermal detectors in patient rooms, closets, etc.
Register to record fire, security and surveillance signals
NURSES' RESIDENCE
Four coded transmitters
Central Alarm Panel
1. Relays coded signal from transmitter to pre-signal bells
2. Supervises all circuits
3. Provides for testing
Local annunciator panel
1. Gas alarms for operating rooms
2. Equipment failure
3. Constant temperature and laboratory room alarms
4. Drug storage security
Coded transmitter
RESEARCH CENTER
to fire department
Municipal box

TYPICAL SYSTEM FOR COMMERCIAL BUILDINGS

Commercial buildings such as office buildings and stores have peculiar needs for fire alarm systems because they are heavily populated during daytime hours and largely unoccupied at night. The most critical period for fire detection is at night, when only watchmen occupy the building, so the fire detection and alarm system is designed for maximum protection at that time. In the office building illustrated here, all thermal and smoke detectors, sprinkler switches and combination watchman tour-manual fire stations are tied into four coded transmitters.

The transmitters are located at the four stairwells so that the coded bell signals will give occupants of the building during the day notification of a fire's location and thus permit safe evacuation via a stairwell not affected by the fire. At night, signals from watchman stations are relayed to the central panel by the coded transmitters so that the central guard is aware at all times of the location of the watchmen. Location of watchmen can be indicated by audible signals, readout lights or on a register as is shown on the illustration.

The register also keeps a permanent record of the watchman's tour as well as of any fire or system trouble signals. One of several Honeywell security systems for the bank on the first floor also is tied into the central panel, although a separate security panel is also used. A local annunciator panel in the equipment room is used for surveillance of mechanical equipment, and any trouble signal is relayed to the central fire panel. The fire detection and alarm system is tied into the municipal alarm system so that the fire department is notified automatically in case of fire.


OFFICE FLOOR
Thermal detectors in offices, closets, etc.
Combination Watchman Tour-Manual Stations
Coded bell signal at panel and throughout building
Sprinkler Switches
Coded Transmitters—4 per floor at stairwells
Smoke Sentry in computer and business machine rooms, shafts, stairwells, large storage areas
Register
1. Record alarm signals
2. Records watchman tour signals
3. Records security alarms
4. Records surveillance alarms
Municipal box
Central Alarm Panel
1. Relays signal from transmitter to coded bells
2. Supervises all circuits
3. Provides for testing
4. Receives miscellaneous alarms
BANK ON FIRST FLOOR
Bank security system
EQUIPMENT ROOM
Local annunciator panel (shows location of equipment failure)

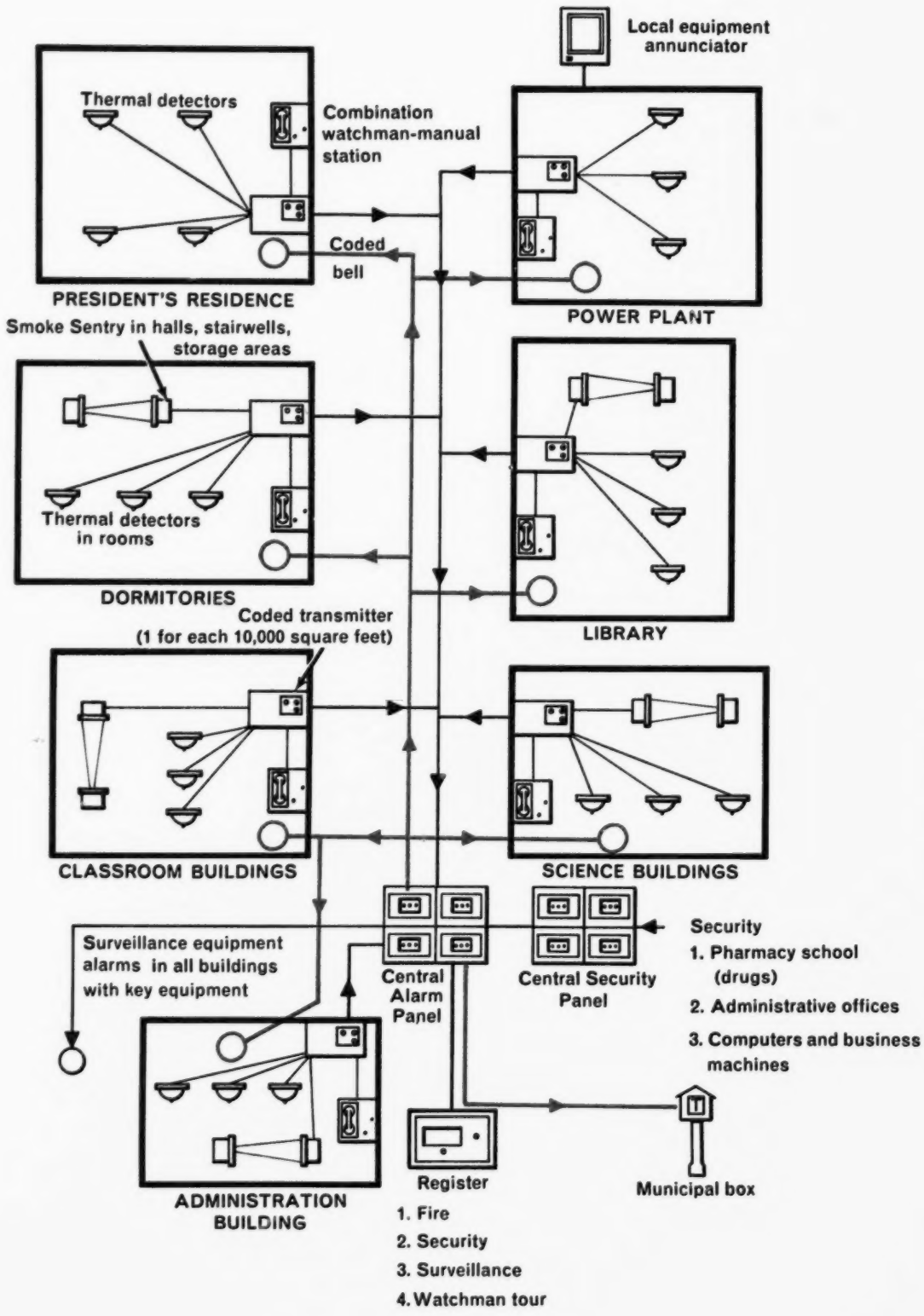
TYPICAL SYSTEM FOR COLLEGE CAMPUSES

Because buildings on a college campus are normally widely separated, a centrally controlled fire detection and alarm system is essential for good fire protection. In the system shown here, all fire, security and surveillance equipment is centralized in the administration building where a guard or other responsible person is on 24-hour duty. Each building on the campus comprises one or more zones, depending on size. Each zone has all of its thermal and smoke detectors, sprinkler switches and combination watchman tour-manual stations tied into a coded transmitter.

In event of fire, the transmitter sends a coded signal to the central alarm panel, which in turn relays the signal to coded bells in important locations such as the president's home, guard desk and power plant. Fire signals are also transmitted to a municipal box and to the local fire department. Smoke Sentry detectors should be used in science laboratories, computer and business machine rooms and libraries, as well as in halls, stairwells and storage areas of other buildings.

Allied equipment in this system includes a local equipment failure annunciator in the power plant, equipment surveillance alarms in all buildings with key equipment and security alarms for the pharmacy school's drug storage area, administrative offices and business machine rooms.

All information fed into the central alarm panel, including fire, security, surveillance and watchman's tour signals, is automatically recorded on a register. In buildings where it is deemed necessary, general alarms are installed for evacuation in case of fire. With this system, the centrally located guard is notified automatically of fire, security violation or other trouble and can take action immediately.


Local equipment annunciator
Thermal detectors
Combination watchman-manual station
Coded bell
PRESIDENT'S RESIDENCE
POWER PLANT
Smoke Sentry in halls, stairwells, storage areas
Thermal detectors in rooms
DORMITORIES
LIBRARY
Coded transmitter (1 for each 10,000 square feet)
CLASSROOM BUILDINGS
SCIENCE BUILDINGS
Surveillance equipment alarms in all buildings with key equipment
Central Alarm Panel
Central Security Panel
Security
1. Pharmacy school (drugs)
2. Administrative offices
3. Computers and business machines
ADMINISTRATION BUILDING
Register
Municipal box
1. Fire
2. Security
3. Surveillance
4. Watchman tour

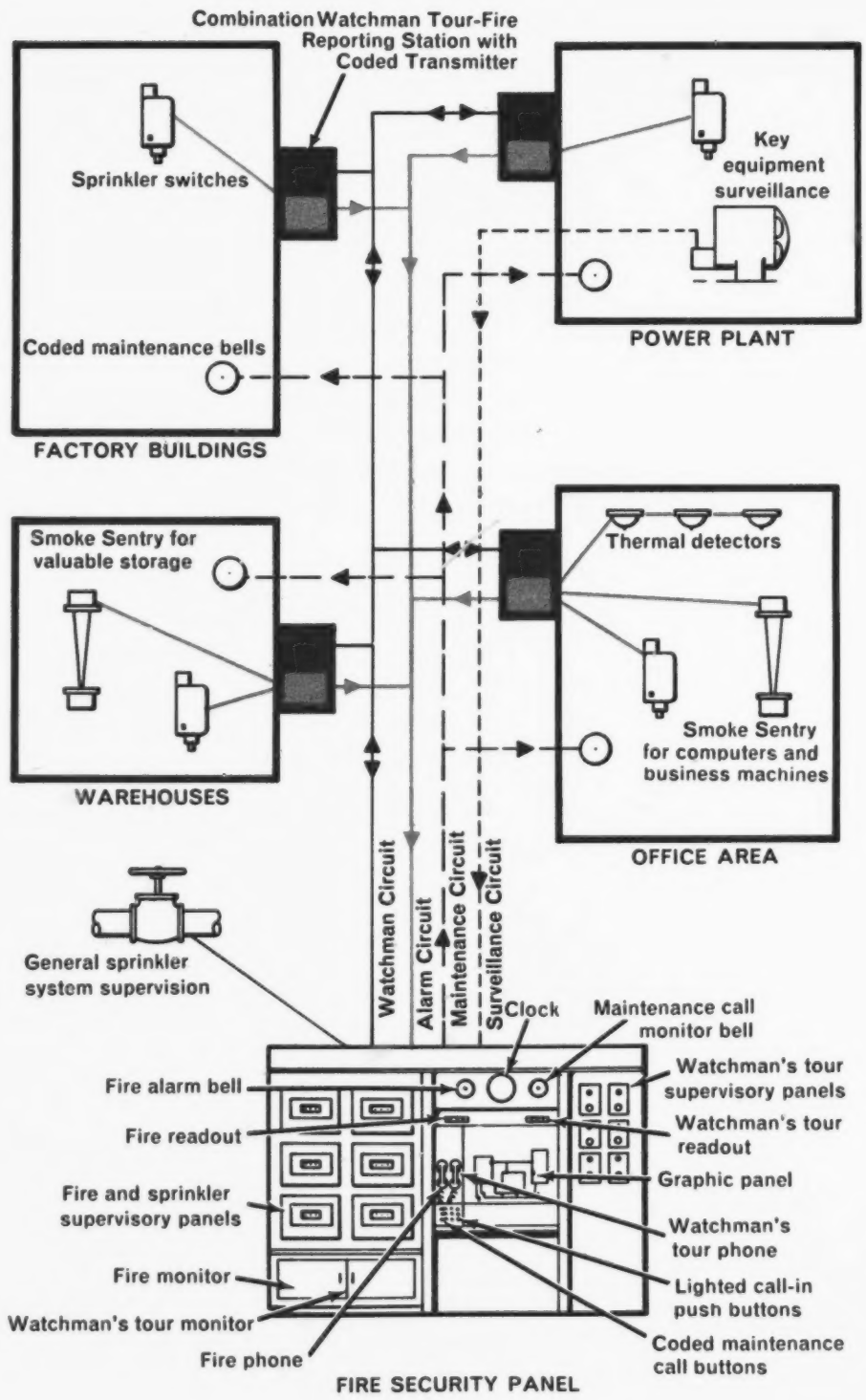
TYPICAL SYSTEM FOR AN INDUSTRIAL PLANT

A fire security system that includes both a fire alarm system and a watchman's tour system will give the typical industrial plant the best possible protection at the lowest cost. With complete protection, the guard force need not be as large and, in many cases, insurance credits are greater. This system has several functions.

First, it supervises sprinklers for water flow and supervises the entire sprinkler system to assure trouble-free operation. Second, it has provisions for a coded maintenance call system so that the central guard can ring for repair crews from his panel. Third, any fire is reported by coded transmitters to the main panel either through sprinkler water flow, signals from thermal and smoke detectors or from manual stations operated by watchmen. Fourth, the system receives and records signals from the watchman tour stations. And fifth, key equipment in the plant is under constant surveillance.

The central alarm panel, as shown in the illustration, includes separate fire, sprinkler and watchman's tour supervisory panels, lighted readouts for both fire and watchman's tour signals, maintenance call buttons, a graphic panel of the plant layout, fire and watchman telephones and typewriter-monitors which record all fire, watchman's tour, sprinkler and equipment surveillance signals.

The central guard at this control console is in complete control of the plant at all times. Watchmen's tours are completely supervised and the location of each watchman is known at all times. Thermal detectors are used in office areas, and Smoke Sentry detectors are used in computer and business machine rooms and in warehouse areas where valuable merchandise is stored. The central guard can signal watchmen to call in on an intercommunication system by merely pressing a button.


Combination Watchman Tour-Fire Reporting Station with Coded Transmitter
Sprinkler switches
Coded maintenance bells
FACTORY BUILDINGS
Key equipment surveillance
POWER PLANT
Smoke Sentry for valuable storage
WAREHOUSES
Thermal detectors
Smoke Sentry for computers and business machines
OFFICE AREA
Watchman Circuit
Alarm Circuit
Maintenance Circuit
Surveillance Circuit
General sprinkler system supervision
Clock
Maintenance call monitor bell
Fire alarm bell
Fire readout
Fire and sprinkler supervisory panels
Fire monitor
Watchman's tour monitor
Fire phone
Watchman's tour supervisory panels
Watchman's tour readout
Graphic panel
Watchman's tour phone
Lighted call-in push buttons
Coded maintenance call buttons
FIRE SECURITY PANEL

Your architect and engineer can help you decide which system is best for your building

When planning a fire detection and alarm system, consult your architect or electrical engineer for the best, most practical and most economical system for your building. Honeywell sales engineers in 112 offices across the nation will assist you, your architect and engineer in designing this system. For complete information, call your nearest Honeywell office, or write:

Robert Y. Buzby, Manager
Fire Detection and Alarm, Commercial Division (F) Honeywell
2747 Fourth Avenue So., Minneapolis 8, Minnesota

Completing the picture of building automation

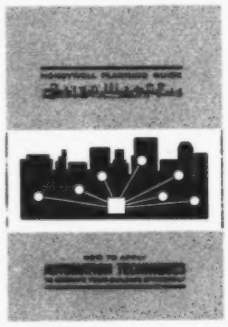
Automatic fire detection and alarm systems are but one of the facets of a complete and practical building automation system. To obtain the best control, greatest economy and highest operating efficiency, all of the building functions should be centralized at one point. Honeywell's approach to building automation gives the building engineer or other responsible person central monitoring and control of all functions, such as the air conditioning system, security and fire protection, electronic air cleaning and the time and program system. Honeywell combines all of these control functions in a modular panel known as the Supervisory DataCenter. From this panel, the engineer is in constant contact with all parts of his building. The Supervisory DataCenter is custom-designed to suit each building, to handle any number of control functions.

THE HONEYWELL SUPERVISORY DATACENTER with SELECTOGRAPHIC CONSOLE.
Centralized monitoring, recording and control of all building functions.

FIVE MORE PLANNING GUIDES

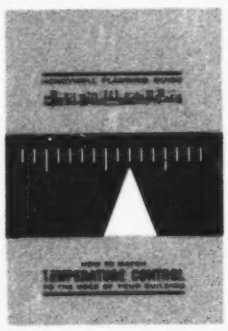
This report on automatic fire detection and alarm systems is one of six booklets prepared by Honeywell to inform businessmen about the latest advances in control systems. For complete information on other phases of building automation, you are encouraged to send for any or all of the five other booklets, listed below. Please order by number and send your request to:

Inquiry Supervisor
Mail Station 118 (F), Honeywell
2747 Fourth Ave. S., Minneapolis 8, Minn.



How to apply **AUTOMATION TECHNIQUES**
to operate your building efficiently

54-1016



How to match **TEMPERATURE CONTROL**
to the uses of your building

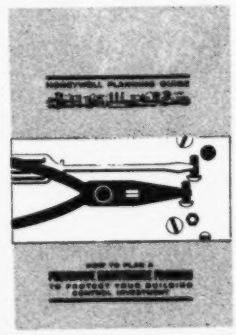
54-0075

How to select the proper
SECURITY AND EQUIPMENT SURVEILLANCE SYSTEMS
to protect your facilities

54-2014

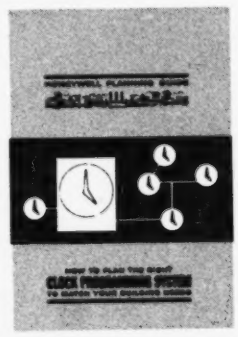
IN CANADA—For complete information on Honeywell control systems, telephone your nearest Honeywell office. If you would like to have a salesman call, or would like any of the five booklets listed below, please write to:

E. Duncan
Honeywell Controls Ltd.
Toronto 17, Ontario



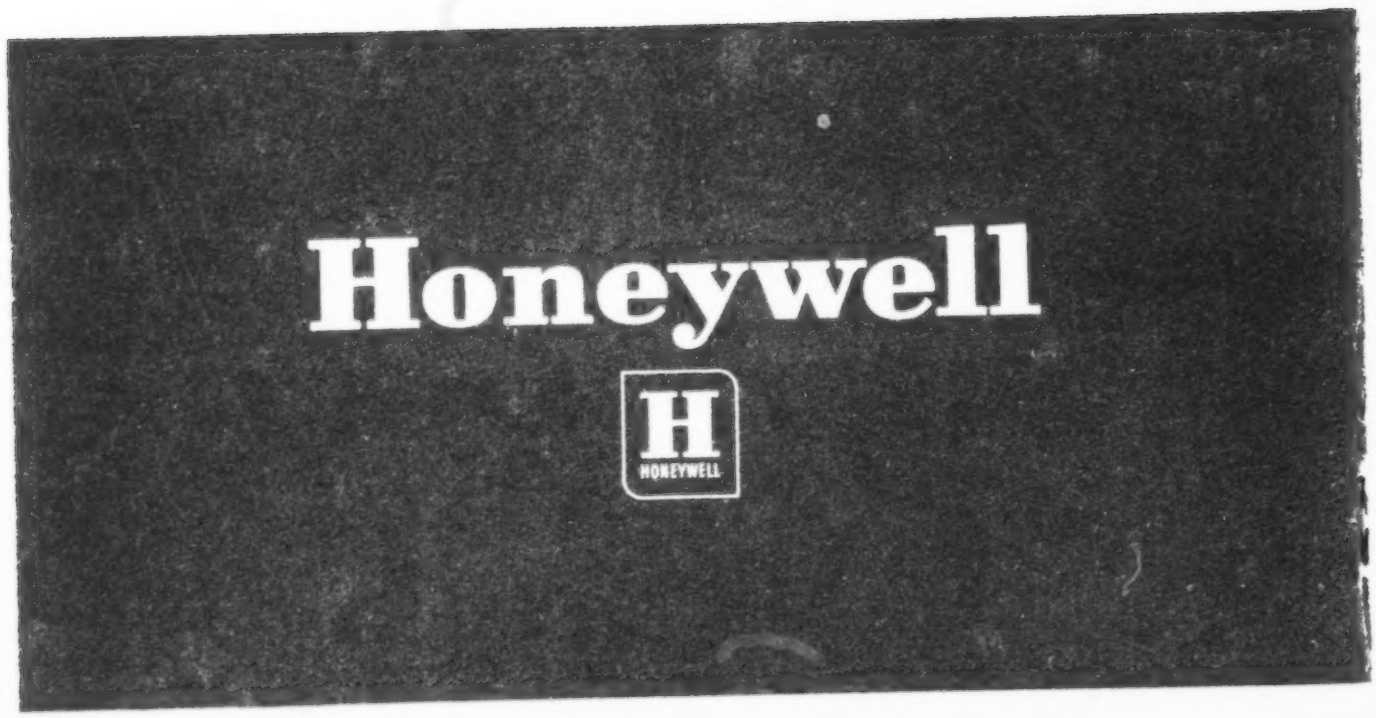
How to plan a **PREVENTIVE MAINTENANCE PROGRAM**
to protect your building control investment

54-0074



How to plan the right **CLOCK PROGRAMMING SYSTEM**
to match your building needs

57-8007



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